



NOAA Teacher at Sea
Nancy McClintock
Onboard NASA Ship LIBERTY STAR
June 7 – 14, 2006

NOAA Teacher at Sea: Nancy McClintock

NASA Ship: M/V FREEDOM STAR

Mission: South Atlantic MPA's: Pre-closure evaluation of habitat and fish assemblages in five proposed no fishing zones

Day 3: Friday, June 9, 2006

Weather Data from Bridge – AM

Visibility: good

Wind direction: SW/W

Average wind speed: 20 knots

Wave height: 8-10'

Air temperature: 72°F

Cloud cover: 70%

Barometric pressure: 1009.8 mb

Weather Data from Bridge - PM

Visibility: good with a little haze

Wind direction: SE

Average wind speed: 9.5 knots

Wave height: 3-4'

Air temperature: 74°F

Cloud cover: 70%

Barometric pressure: 1010 mb

Science and Technology Log

The FREEDOM STAR traveled approximately 134 miles north toward the coast of South Carolina during the night of June 8. Due to increased winds, the waves reached a height of 8-10 feet. Operations for the morning were cancelled until conditions improved. At approximately 1300, the fish trap was



The camera array secures four digital video cameras in waterproof containers to a frame that is tethered and lowered to the ocean floor.



Upon retrieval by NOAA scientists and FREEDOM STAR crew, containers are rinsed several times in freshwater and wiped down to remove the saltwater. Tapes are removed, logged, and can be viewed on a small digital player. Data is meticulously analyzed later in the NOAA Lab.

deployed with 450 feet of Amsteel Blue line 7/16 inches in diameter and a breaking strength of 27,000 pounds tethered to high-flyer floats as markers for a later retrieval. Upon recovery after 90 minutes, the fish trap contained 7 porgies and 1 triggerfish. Three measurements were recorded for the fish – standard length (mouth to the beginning of the tail), fork length (mouth to the fork or middle of the tail), and total length (mouth to end of tail). The camera array was readied and deployed as waves soaked the back



Cece Linder, NOAA scientist, records the full-length measurement of a porgy caught in the fish trap. This is one of three measurements recorded for each fish caught

deck. The CTD was deployed and rested in the water for 1 minute to let the water flow through the instrument and acclimate it. It was lowered to the ocean floor for 15 seconds during which time conductivity, temperature, and other data were collected. The ROV (Hela) was successfully deployed. However, after reaching the ocean floor, one of the cameras was not functioning and the ROV operation was terminated. The camera was repaired, the vehicle was launched, and the ROV dive was successfully completed at 1930 at a depth of 222 feet. This was the first of the dives during which the strobe functioned and images were excellent. The bottom consisted of hard compacted sand called pavement, crevices, and relief rocky outcrops. Some of the species identified included a sea cucumber (an invertebrate), razor fish, porgies, groupers, hogfish, a school of amberjack, and 2 lionfish. Lionfish is an introduced species in this area and appears to adversely impact the biodiversity of native species. In spite of early morning weather conditions and the late start, all planned operations were concluded by the end of the day.

Personal Log

Little did I know that the “flight simulator” from the night before was only to be an introduction to 8-10’ waves. I experienced the effect of anti-gravity as I was bounced around in my bunk. After trying to get out of my bunk several times, I was successful only to find that I was overtaken by motion sickness. Weather conditions cancelled the morning operations and I was very content to spend the morning in my bunk trying to recover. The afternoon arrived, weather conditions improved, and a light lunch made everything better. On rocky days it helps to keep your eyes on the horizon at the rear of the ship, just like our field investigations to Shaw Nature Reserve. I always teach on the way to the Reserve and keep an eye on the rear of the bus - it really does help with motion sickness. This afternoon was a full-gear day and I donned my lifejacket and hardhat to help with the deployment of the fish trap and camera array. This gear is always necessary when the crane is in operation. Safety of everyone on board is first while conducting the operations. It feels great to be an active member of the scientific team. The images from the ROV are amazing and I sit at the laptop and continue to take digital images of the ocean floor. The brightly colored sponges, the darting of the fish, the sea anemone, starfish, and sea cucumber bring excitement to the crew in the lab. This is an entirely different ecosystem that is so different to those that we see and study in

Missouri and I am truly in awe! Another unique experience is sitting at the computer working on my daily log as the ship is underway to our new position. This is a flat-bottom ship and it really rocks and rolls. It is a challenge to type and keep my chair (that is on rolling wheels) close to the keyboard. Even though the weather and equipment did not cooperate 100%, it was another successful day and I am looking forward to many new adventures.

Until tomorrow...

Nancy

Question of the Day

Answer to yesterday's question:

There are many answers to this controversial

question. If the MPAs designated on this cruise were established in the future, over fishing of five species of grouper and 2 species of tilefish might be prevented. Hopefully, this would protect them from endangerment or, possibly, extinction. Whenever one part of the "Web of Life" is affected, the entire "Web of Life" is affected. The designation of MPAs is a very controversial topic.

Today's question:

How does the introduction of a non-native species of fish affect the biodiversity of the ocean ecosystem?

Interview with Stacey Harter

Stacey is the NOAA data manager for the cruise. She annotates the positions, and habitats, and ocean life for the ROV tapes. She grew up in upstate New York and always knew that she wanted to have a career in the field of marine biology. While at Florida State University she completed an internship at the Panama City NOAA Fisheries Lab. Upon graduation, she began working for NOAA and has been there for the past 4 years. She holds a Master's Degree in Marine Biology and loves her job.

Addendum 1: Scientific Personnel for the M/V FREEDOM STAR

Andrew David, NMFS (National Marine Fisheries Service) Panama City, Principal Investigator

Stacey Harter, NMFS Panama City, Data Manager

Marta Ribera, NMFS Panama City, GIS/ROV/Deck

Craig Bussel, NURC (National Undersea Research Center), ROV Pilot

Kevin Joy, NURC, ROV Navigator

Freshteh Ahmadian, NURC, ROV

Steve Matthews, NMFS Panama City, ROV/Deck

Cecelia Linder, NMFS Headquarters, ROV/Deck

Nancy McClintock, NOAA Teacher at Sea

Mark Silverman, NOAA Teacher at Sea



Nancy McClintock, NOAA Teacher at Sea, tries on a survival suit informally known as a "Gumby Suit." The suit helps to prevent hypothermia in case there is an emergency requiring evacuation of the ship.